



Agriculture, Forestry Poised to Take Significant Role in Reduced Carbon Economy

Editor's note: The following is the latest in a series of monthly feature stories from 25x'25 that highlight the challenges and opportunities presented by the pursuit of a renewable energy future. We encourage all partners to use all or any part of this feature in your internal or external communications. Media recipients should feel free to use this material in your efforts to cover this vastly complex issue.

The election is over and Democratic candidate, Sen. Barack Obama (D-IL) has been declared the winner, while Democrats also have made significant gains in securing control of Congress. And while there may have been an element of uncertainty leading up to those election results Nov. 4th, what has never been in doubt for much of the past year, regardless of electoral winners, is federal action aimed at reducing the magnitude of climate change. That agriculture and forestry will play a role in any strategy aimed at reducing the emissions that contribute to global warming is also a certainty.

Obama and his Republican opponent, Sen. John McCain (R-AZ), along with House and Senate leadership, both said they want to enact a plan to reduce the greenhouse gases - emissions that create a "greenhouse" effect and warm the Earth's temperatures. Both presidential candidates supported a plan adopted by the Senate Environment Committee in December, 2007 and considered by the full Senate this summer (it failed to garner the 60 votes needed to overcome a procedural challenge) that called for a 71-percent reduction from 2005 greenhouse gas emission levels by 2050 through the nationwide regulation of emissions with a cap-and-trade credit system. The proposal would allow companies that exceed their allowable emission limits to purchase credits from those entities that fall under their allowed limits. As president-elect, Obama has pledged to implement an economy-wide cap-and-trade program to reduce greenhouse gas emissions 80 percent by 2050.

The House Energy and Commerce Committee in October released a 461-page "discussion draft" of legislation that would impose mandatory reductions in emissions that contribute to climate change. The draft is the culmination of a year of hearings and a series of "white papers" issued by the committee on various aspects of global warming and comes in anticipation of next year's climate change debate to be taken up by the new Congress and an Obama administration. The House proposal differs some from the Senate version by setting lower emission limits in the earlier years of the program to allow, supporters say, for the development of new clean energy

and carbon-capture technology. The impact on House climate change proposals next year as the result of the recent elevation of Rep. Henry Waxman (D-CA) to chairman of the House Energy Committee, succeeding Rep. John Dingell (D-MI), remains uncertain.

Adding to the momentum for action is a Supreme Court decision last year that found that greenhouse gases are pollutants under the Clean Air Act - a ruling that puts pressure on federal environmental regulators to take action.

Another driver behind the call for action on climate change was highlighted just this week when California Gov. Arnold Schwarzenegger signed a declaration with 11 other U.S. states and provinces or states in five other countries to help cut greenhouse gas emissions. Schwarzenegger told a climate summit in California attended by more than 700 delegates from 19 countries on Wednesday that fighting climate change shouldn't just go "nation by nation," but also must go "province by province." Regional leaders signing the declaration, including 12 U.S. governors and state or provincial representatives from Canada, Mexico, Brazil, Indonesia and India, promised to develop strategies for high-polluting industries in an effort to influence talks set for next year in Poland to renew the Kyoto Protocol, which aims to curb global climate change emissions.

Support for the role of agriculture and forestry in a reduced carbon economy, and a consensus on the accompanying advantages available to farmers, ranchers and forestland owners, is building. In anticipation of an evolution into the so-called "low carbon" economy and the benefits inherent to the transition, the National 25x'25 Steering Committee has convened a Carbon Work Group - a panel of agricultural, forestry, conservation and environmental experts - that is looking at ways agriculture and forestry sectors may contribute to the curtailment of climate change, as well as looking for and identifying the economic opportunities and challenges that are expected to come with the transition.

The Carbon Work Group is expected to complete its work soon and in early 2009, the Steering Committee plans to issue a report from the group's effort, *Opportunities in a Reduced Carbon Economy: A Primer for Agriculture and Forestry*.

Jean-Mari Peltier, the former president and CEO of the National Council of Farmer Cooperatives (NCFC), spoke for many in the industry when she affirmed at a 25x'25 Summit held in Omaha, NE, this year that forestry and agriculture can be part of the solution to addressing global climate change. "The agricultural industry has a real opportunity to make a positive impact on a reduced carbon economy, and benefit financially while doing this," said Peltier.

While most of the opportunities are best presented through soil sequestration of carbon and methane capture in animal agriculture operations, Peltier said the industry must ensure that all opportunities for U.S. producers be maximized, citing, for instance, the role that perennial crops such as fruit trees, grape vines and the like play in the carbon sequestration process.

There is also widespread agreement that no single legislative, regulatory or market-based initiative will fully address the changes needed to reduce carbon emissions. In addition to a cap-and-trade program, other policy alternatives expected to be considered include a carbon tax, additional biofuel volume mandates and carbon content limits on transportation fuels, increased vehicular mileage standards, more energy efficient building standards, renewable electricity

objectives, and incentives aimed at improving technology, among others.

Of particular interest to the agriculture and forestry sectors is a cap-and-trade proposal, which, like a carbon tax, can be employed to control the emissions of greenhouse gases as needed. (Greenhouse gas emissions are often referred to as just "carbon emissions," though there are six greenhouse gases recommended for regulation by the Intergovernmental Panel on Climate Change, including carbon dioxide, or CO₂.) Advocates say a cap and trade system allows relatively precise control of total emissions and also provides low-cost offsets from uncapped sectors, including agriculture and forestry, to produce new revenue streams and help reduce total program costs.

At issue is the administrative complexity involved with cap-and-trade programs, with market prices for allowances and equivalent offsets, or credits, varying as supply and demand shifts work through the system. While a tax on carbon does not directly control total emissions, it is seen by some as easier to administer than a cap-and-trade system. And while it can more readily fix stable market prices for carbon emissions, it could also be applied to the agriculture and forestry sectors, increasing the costs of operations.

Under proposed cap-and-trade legislation, such as the scheme envisioned by the Senate Environment Committee, emissions from the agriculture and forestry sectors are uncapped. Both sectors engage in significant biological sequestration of carbon dioxide, and there is potential for more. Agriculture can also contribute reductions of methane and nitrous oxide, two other types of emissions recommended for regulation by the IPCC. With both sectors recording emission reductions in the "plus" column, they can produce an income stream from the sale of those reductions as offsets, or credits, to entities that exceed their emission allowances.

Rich Krause, climate change specialist with the American Farm Bureau Federation, notes that all cap-and-trade proposals are not totally benign to agriculture and forestry. While the Senate proposal does not regulate agriculture emissions specifically, he says, it does define a regulated "facility" as one or more buildings or structures on the same site that emit more than 10,000 tons of carbon (or the equivalent) per year. "That definition could possibly bring some large operations under the regulatory umbrella."

But Krause says the good news under a cap-and-trade regime is the opportunities provided "for farmers, ranchers and foresters to implement voluntary greenhouse gas mitigation practices that could then be transformed into credits that excess greenhouse gas emitters could purchase on the market. This means that growers could get paid for using soil, manure and fertilizer management practices," he said.

Krause said the Senate proposal "does include a full range of agricultural practices, including soil sequestration, methane capture and destruction, and fertilizer management as allowable offset projects. The question is to what extent the economic benefits from these offset opportunities offset the increased costs to agriculture resulting from the bill."

"All sectors of the U.S. economy will need to reduce their greenhouse gas emissions," says Nathan Rudgers, a member of the National 25x'25 Steering Committee and chairman of the Carbon Work Group. "The opportunity to voluntarily participate in the offset markets as an uncapped sector being paid for reductions has distinct advantages. Agriculture and forestry

stakeholders can capitalize on the opportunity by documenting their willingness and ability to produce emissions reductions. By providing offsets for other industries, they'll be increasing their own economic stability while providing additional benefits to the nation."

"Agriculture's ability to fulfill this promise is contingent on the price for carbon in the marketplace," adds Peltier, the former NCFE CEO. While the price of emission credits on markets such as the Chicago Climate Exchange (CCX) has fluctuated, Peltier insists that "new laws and regulations being discussed . . . could result in dramatic increases in the value of carbon, leading to greater potential benefit to agricultural producers."

That optimism is reflected by a study that shows the existing global market for "carbon trading" grew 36 percent between January and September of this year, from \$67 billion to \$84 billion, without government mandates. In fact, says New Energy Finance, a London-based company that tracks activity in energy markets, the market is expected to surpass \$100 billion by the end of this year, despite the economic upheaval being experienced by other markets. The CCX currently has some 350 members, including more than 10 percent of the Fortune 100 and eight cities.

And what does agriculture and forestry bring to the table when calculating the contributions farmers, ranchers and forestland owner can make to reducing emissions? Consider the following talking points issued by 25x'25 earlier this year on how crop production practices can impact climate change:

- Conservation tillage, which is a set of practices that provide minimal disturbance of the soil and leave at least 30 percent of the surface covered with crop residues. The most current national data gathered the Conservation Technology Information Center show that some form of crop residue management, which includes conservation tillage plus "reduced tillage," was practiced on 62.2 percent of total cropland. And the number is growing.
- Using conservation tillage and other residue management techniques can provide a constant buildup of soil organic carbon - more than 50 percent over 10 years that reduces greenhouse gas emissions by preventing carbon from transforming into carbon dioxide through decomposition.
- Researchers at Ohio State University say that the total carbon sequestration potential of U.S. cropland through improved management is as much as 208 million metric tons of carbon per year, or the equivalent of 763 million metric tons of carbon dioxide emissions, or nearly 14.5 percent of total U.S. greenhouse gas emissions.
- And because conservation tillage requires fewer passes over a crop field, less fossil fuel is burned, reducing another 4.4 million metric tons in carbon dioxide emissions.
- Another 300 million tons of carbon can be sequestered per year from U.S. forests.
- The total potential of carbon sequestration in U.S. soils, counting croplands, grazing lands and woodlands, is nearly 600 million metric tons of carbon, or the equivalent of more than 2,200 million metric tons of carbon dioxide emissions about 33 percent of total U.S. emissions.
- There are nontraditional feedstocks that offer even greater carbon sequestration while decreasing the use of fossil fuel. Switchgrass, for example, is a perennial native grass that doesn't

require annual planting, and is harvested by taking annual cuttings. The plants require fewer inputs such as fertilizer and pesticides and have tremendous root systems that sequester carbon continuously.

Given the right tools, both in application and policy, America's farmers, ranchers and forestland owners will be well-positioned to develop cost-effective strategies to reduce greenhouse gas emissions and enter the renewable energy marketplace.

To read and download a summary of the climate change legislation considered by the Senate earlier this year, go to http://epw.senate.gov/public/index.cfm?FuseAction=Files.View&FileStore_id=441a4c27-8df5-4008-8931-7e07e8914a51.

To read and download an executive summary of the House Energy Committee proposal, go to <http://energycommerce.house.gov/>.

For more information on the California Climate Summit and the full text of the declaration signed by 26 state and global leaders, go to <http://gov.ca.gov/index.php?/press-release/11112/>.

To learn more about crop production practices and climate change, go to <http://www.25x25.org/cropandclimate>.

Look for the release soon of the final report of the 25x'25 Carbon Work Group, Opportunities in a Reduced Carbon Economy: A Primer for Agriculture and Forestry, by monitoring the National 25x'25 Alliance Web site at www.25x25.org.

25x'25 is a diverse alliance of agricultural, forestry, environmental, conservation and other organizations and businesses that are working collaboratively to advance the goal of securing 25 percent of the nation's energy needs from renewable sources by the year 2025. 25x'25 is led by a national steering committee composed of volunteer leaders. The 25x'25 goal has been endorsed by nearly 800 organizations and companies, 30 governors, 14 state legislatures, and the U.S. Congress through the Energy Independence and Security Act, which was signed into law by President Bush on December 19, 2007. 25x'25 is a special project of the Energy Future Coalition (EFC). The EFC is a broad-based non-partisan public policy initiative that seeks to bring about change in U.S. energy policy to address overarching challenges related to the production and use of energy.

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